



12500 TI Boulevard, MS 8640, Dallas, Texas 75243

PCN# 20200728003.1
Die Coating material change for select devices
Change Notification / Sample Request

Date: July 31, 2020
To: PREMIER FARNELL PCN

Dear Customer:

This is an announcement of a change to a device that is currently offered by Texas Instruments. The details of this change are on the following pages.

Texas Instruments requires acknowledgement of receipt of this notification within **30** days of the date of this notice. Lack of acknowledgement of this notice within 30 days constitutes acceptance of the change. If samples or additional data are required, requests must be received within **30 days** of this notification.

The changes discussed within this PCN will not take effect any earlier than the proposed first ship date on Page 3 of this notification, unless customer agreement has been reached on an earlier implementation of the change.

This notice does not change the end-of-life status of any product. Should product affected be on a previously issued product withdrawal/discontinuance notice, this notification does not extend the life of that product or change the life time buy offering/discontinuance plan.

For questions regarding this notice or to provide acknowledgement of this PCN, you may contact your local Field Sales Representative or the PCN Team (PCN_ww_admin_team@list.ti.com). For sample requests or sample related questions, contact your local Field Sales Representative.

Sincerely,

PCN Team
SC Business Services

20200728003.1
Attachment: 1

Products Affected:

The devices listed on this page are a subset of the complete list of affected devices. According to our records, these are the devices that you have purchased within the past twenty-four (24) months. The corresponding customer part number is also listed, if available.

| DEVICE | CUSTOMER PART NUMBER |
|----------------------|-----------------------------|
| LM4040AIM3-2.5/NOPB | null |
| LM4040BIM3-2.5/NOPB | null |
| LM4040CIM3-2.5/NOPB | null |
| LM4040CIM3X-2.5/NOPB | null |
| LM4040DIM3-2.5/NOPB | null |
| LM4040DIM3X-2.5/NOPB | null |
| LM4040EIM3-2.5/NOPB | null |

Technical details of this Product Change follow on the next page(s).

| | | | |
|--|--|---------------------------------------|----------------------------------|
| PCN Number: | 20200728003.1 | PCN Date: | Jul 31, 2020 |
| Title: | Die Coating material change for Select Devices | | |
| Customer Contact: | PCN Manager | Dept: | Quality Services |
| Proposed 1st Ship Date: | Oct 31, 2020 | Estimated Sample Availability: | Date provided at sample request. |
| Change Type: | | | |
| <input type="checkbox"/> | Assembly Site | <input type="checkbox"/> | Assembly Process |
| <input type="checkbox"/> | Design | <input type="checkbox"/> | Assembly Materials |
| <input type="checkbox"/> | Test Site | <input type="checkbox"/> | Electrical Specification |
| <input type="checkbox"/> | Wafer Bump Site | <input type="checkbox"/> | Mechanical Specification |
| <input type="checkbox"/> | Wafer Fab Site | <input type="checkbox"/> | Packing/Shipping/Labeling |
| <input type="checkbox"/> | | <input checked="" type="checkbox"/> | Test Process |
| <input type="checkbox"/> | | <input type="checkbox"/> | Wafer Bump Material |
| <input type="checkbox"/> | | <input type="checkbox"/> | Wafer Bump Process |
| <input type="checkbox"/> | | <input type="checkbox"/> | Wafer Fab Materials |
| <input type="checkbox"/> | | <input type="checkbox"/> | Wafer Fab Process |
| <input type="checkbox"/> | | <input type="checkbox"/> | Part number change |
| PCN Details | | | |
| Description of Change: | | | |
| This notification is to announce the change to the Die Coating material for the selected devices listed in "Product Affected" section. | | | |
| Change From | | Change To | |
| NONE | | POLYIMIDE | |
| Qual details are provided in the Qual Data Section. | | | |
| Reason for Change: | | | |
| Manufacturing Enhancement | | | |
| Anticipated impact on Form, Fit, Function, Quality or Reliability (positive / negative): | | | |
| None | | | |
| Changes to product identification resulting from this PCN: | | | |
| None | | | |
| Product Affected: | | | |
| LM4040AIM3-2.5 | LM4040CEM3-2.5/E7001881 | LM4040DIM3-2.5 | |
| LM4040AIM3-2.5/NOPB | LM4040CEM3-2.5/NOPB | LM4040DIM3-2.5/NOPB | |
| LM4040AIM3X-2.5 | LM4040CIM3-2.5 | LM4040DIM3X-2.5 | |
| LM4040AIM3X-2.5/NOPB | LM4040CIM3-2.5/NOPB | LM4040DIM3X-2.5/NOPB | |
| LM4040BIM3-2.5 | LM4040CIM3X-2.5 | LM4040EEM3-2.5/NOPB | |
| LM4040BIM3-2.5/NOPB | LM4040CIM3X-2.5/NOPB | LM4040EIM3-2.5 | |
| LM4040BIM3X-2.5 | LM4040DEM3-2.5/NOPB | LM4040EIM3-2.5/NOPB | |
| LM4040BIM3X-2.5/NOPB | LM4040DEM3-2.5/S4000169 | LM4040EIM3X-2.5 | |
| LM4040CEM3-2.5 | LM4040DEM3X-2.5/NOPB | LM4040EIM3X-2.5/NOPB | |

Qualification Report

Approve Date 20-July-2020

Qualification Results

Data Displayed as: Number of lots / Total sample size / Total failed

| Type | Test Name / Condition | Duration | Qual Vehicle: LM4040AIM3-2.5 (GFAB) | QBS Product Reference: LM4040AIM3-2.5 (SFAB) | QBS Product Reference: LM4040AIM3-2.5 CTRL (GFAB) | QBS Product Reference: <u>LM4040QCEM3- 5.0/NOPB</u> |
|------|-------------------------------|-------------------------------|---|---|--|---|
| AC | Autoclave 121C | 96 Hours | 1/77/0 | 1/77/0 | 1/77/0 | 3/231/0 |
| ED | Electrical Characterization | - | 1/30/0 | 1/30/0 | 1/30/0 | - |
| ELFR | Early Life Failure Rate, 140C | 48 Hours | - | - | - | 3/2400/0 |
| CDM | ESD - CDM | 750 V | - | - | - | 1/3/0 |
| CDM | ESD - CDM | 1000 V | - | - | - | 1/3/0 |
| HBM | ESD - HBM | 2000 V | - | - | - | 1/3/0 |
| HAST | Biased HAST, 130C/85%RH | 96 Hours | - | - | - | 3/231/0 |
| HTOL | Life Test, 125C | 1000 Hours | 1/77/0 | 1/77/0 | 1/77/0 | 3/231/0 |
| HTSL | High Temp Storage Bake 150C | 1000 Hours | - | - | - | 1/45/0 |
| LU | Latch-up | Per JESD78, 25C | - | - | - | 1/6/0 |
| | Latch-up | Per JESD78, 125C | - | - | - | 1/6/0 |
| MQ | Manufacturability (Assembly) | (per mfg. Site specification) | 1/Pass | 1/Pass | 1/Pass | - |
| MSL | Moisture Sensitivity | - | 1/12/0 | 1/12/0 | 1/12/0 | - |
| TC | Temperature Cycle, -65/150C | 500 Cycles | 1/77/0 | 1/77/0 | 1/77/0 | 3/231/0 |
| WBP | Bond Pull | Post/T/C | - | - | - | 1/5/0 |
| YLD | FTY and Bin Summary | - | 1/Pass | 1/Pass | 1/Pass | - |

- QBS: Qual By Similarity

- Qual Device LM4040AIM3-2.5 is qualified at LEVEL1-260C

- Preconditioning was performed for Autoclave, Unbiased HAST, THB/Biased HAST, Temperature Cycle, Thermal Shock, and HTSL, as applicable

- The following are equivalent HTOL options based on an activation energy of 0.7eV: 125C/1k Hours, 140C/480 Hours, 150C/300 Hours, and 155C/240 Hours

- The following are equivalent HTSL options based on an activation energy of 0.7eV: 150C/1k Hours, and 170C/420 Hours

- The following are equivalent Temp Cycle options per JESD47: -55C/125C/700 Cycles and -65C/150C/500 Cycles

Quality and Environmental data is available at TI's external Web site: <http://www.ti.com/>

Green/Pb-free Status: Qualified Pb-Free (SMT) and Green

Qualification Report

Approve Date 20-July-2020

Qualification Results

Data Displayed as: Number of lots / Total sample size / Total failed

| Type | Test Name / Condition | Duration | Qual Vehicle: LM4040AIM3-2.5 (SFAB) | QBS Product Reference: LM4040AIM3-2.5 (GFAB) | QBS Product Reference: LM4040AIM3-2.5 CTRL (SFAB) | QBS Product Reference: <u>LM4040QCEM3- 5.0/NOPB</u> |
|------|-------------------------------|-------------------------------|---|---|--|---|
| AC | Autoclave 121C | 96 Hours | 1/77/0 | 1/77/0 | 1/77/0 | 3/231/0 |
| ED | Electrical Characterization | - | 1/30/0 | 1/30/0 | 1/30/0 | - |
| ELFR | Early Life Failure Rate, 140C | 48 Hours | - | - | - | 3/2400/0 |
| CDM | ESD - CDM | 750 V | - | - | - | 1/3/0 |
| CDM | ESD - CDM | 1000 V | - | - | - | 1/3/0 |
| HBM | ESD - HBM | 2000 V | - | - | - | 1/3/0 |
| HAST | Biased HAST, 130C/85%RH | 96 Hours | - | - | - | 3/231/0 |
| HTOL | Life Test, 125C | 1000 Hours | 1/77/0 | 1/77/0 | 1/77/0 | 3/231/0 |
| HTSL | High Temp Storage Bake 150C | 1000 Hours | - | - | - | 1/45/0 |
| LU | Latch-up | Per JESD78, 25C | - | - | - | 1/6/0 |
| | Latch-up | Per JESD78, 125C | - | - | - | 1/6/0 |
| MQ | Manufacturability (Assembly) | (per mfg. Site specification) | 1/Pass | 1/Pass | 1/Pass | - |
| MSL | Moisture Sensitivity | - | 1/12/0 | 1/12/0 | 1/12/0 | - |
| TC | Temperature Cycle, -65/150C | 500 Cycles | 1/77/0 | 1/77/0 | 1/77/0 | 3/231/0 |
| WBP | Bond Pull | Post/T/C | - | - | - | 1/5/0 |
| YLD | FTY and Bin Summary | - | 1/Pass | 1/Pass | 1/Pass | - |

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- Qual Device LM4040AIM3-2.5 is qualified at LEVEL1-260C

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Quality and Environmental data is available at TI's external Web site: <http://www.ti.com/>

Green/Pb-free Status: Qualified Pb-Free (SMT) and Green

For questions regarding this notice, e-mails can be sent to the regional contacts shown below, or you can contact your local Field Sales Representative.

| Location | E-Mail |
|-----------------|--|
| USA | PCNAmericasContact@list.ti.com |
| Europe | PCNEuropeContact@list.ti.com |
| Asia Pacific | PCNAsiaContact@list.ti.com |
| WW PCN Team | PCN_ww_admin_team@list.ti.com |

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